What is claimed is:

1. A device for viewing an object with a probe, comprising:

image splitting means for splitting an image of said object into first and second adjacent stereo image parts;

image detecting means for detecting said stereo image parts; and

focusing means for focusing said two stereo image parts from said image splitting means to said image detecting means; wherein said focusing means includes only one optical axis.

2. A device according to claim 1, wherein views of said first and second stereo image parts converge at a given object distance such that said views overlap 100% at said object distance.

3. A device according to claim 1, wherein said image splitting means includes a refractive image splitting prism.

4. A device according to claim 1, wherein said first and second image parts are non-symmetrical.

5. A device according to claim 1, wherein said first and second image parts are symmetrical.

6. A device according to claim 3, wherein said refractive image splitting prism is contained within a detachable distal tip of said device.

7. A device according to claim 3, further comprising a window disposed between said prism and said object, wherein contact is prevented between external media and said image splitting prism.

8. A device according to claim 1, further comprising display means for viewing said stereo image parts as detected by said image detecting means.

9. A device according to claim 8, wherein only one of said stereo image parts is displayed.

10. A device according to claim 8, further comprising viewing means for viewing said first and second image parts such that a right-hand part goes to a right eye of a viewer, and a left-hand part goes to a left eye of said viewer; wherein said viewer is provided with a three dimensional perspective.

11. A device according to claim 8, wherein at least one of first and second portions of said image are displayed at a different magnification from said first and second image parts, with both said at least one of first and second portions and said first and second image parts being displayed concurrently.

12. A device according to claim 1, further comprising measuring means for comparing parameters of said first and second stereo image parts so that measurement data of said object are determined, wherein said measurement data includes at least one geometric characteristic of said object.

13. A device according to claim 12, further comprising an optical characteristics data set used by said measuring means to determine said measurement data.

14. A device according to claim 13, wherein a user is signaled if a difference between said optical characteristics data set and global alignment data determined from said image exists.

15. A device according to claim 12, wherein said device is effective for receiving one of a plurality of detachable distal tips, wherein each of said detachable tips has a corresponding optical characteristics data set, and wherein data determined from said

image is used to select which optical characteristics data set corresponds to said detachable tip emplaced in said probe.

16. A device according to claim 12, wherein said device is effective for using one of a plurality of probes, wherein each of said probes has a corresponding optical characteristics data set, and wherein data determined from said image is used to select which optical characteristics data set corresponds to said probe includes in said device.

17. A device according to claim 13, further comprising calibration means for generating said optical characteristics data set of said device, wherein said calibration means includes a plurality of object target points which appear in both of said first and second stereo image parts when viewed with said probe.

18. A device according to claim 17, wherein said calibration means includes means for color balancing.

19. A device according to claim 17, wherein said plurality of object target points consists of at least two points with known spacing between them at a first object target distance and at least two points with known spacing between them at a second object target distance, wherein a distance between said first and second object target distances is known.

20. A device according to claim 17, wherein said plurality of object target points consists of at least two points with known spacing between them at a first object target distance and at least one point at a second object target distance, wherein a distance between said first and second object target distances is known, and wherein one of said first and second object target distances is known.

21. A device according to claim 17, wherein said optical characteristics data set includes optical mapping distortion, magnification at one or more object target

distances, and parallax information, wherein said calibration means generates said optical characteristics data set from only one image.

22. A device according to claim 17, further comprising means for automatic detection and identification of said plurality of object target points.

23. A device according to claim 17, wherein calibration means includes using a reflection of illumination at at least one known object target distance.

24. A device according to claim 13, wherein said optical characteristics data set is stored in non-volatile memory in said probe.

25. A device according to claim 13, wherein said optical characteristics data set and said first and second image parts are stored in a single file.

26. A device according to claim 13, further comprising adjusting means for adjusting said optical characteristics data set of said device to increase the accuracy of said measurement data when a distal portion of said probe is operated in a medium with an index of refraction which differs from that of air.

27. A device according to claim 12, wherein said measuring means includes matching means for matching a same point viewed on said object in each of said stereo image parts.

28. A device according to claim 27, wherein said matching means includes automatic matching means for automatic matching of a user designated point viewed on said object in said first image part to a corresponding point in said second image part.

29. A device according to claim 28 wherein said automatic matching means includes means for requesting user selection of a correct matched point from a plurality of automatically-identified possible matches.

30. A device according to claim 28, wherein, when a position of said user-designated point on said viewed object in said first image part is changed by said user, said automatic matching dynamically occurs without further user intervention.

31. A device according to claim 28, wherein said automatic matching means includes global alignment means for performing an automatic global alignment of said first and second image parts.

32. A device according to claim 31, wherein said global alignment means includes means for determining a global vertical shift between said first and second image parts.

33. A device according to claim 31 wherein said global alignment means includes means for automatically determining one or more regional horizontal shifts between said first and second image parts.

34. A device according to claim 31 wherein said global alignment means uses the positions of one or more user-designated matched points in said first and second image parts to aid in performing said global alignment.

35. A device according to claim 31 wherein a correction by a user of an incorrect automatic match automatically invokes said global alignment means.

36. A device according to claim 31, wherein data derived from said global alignment means is used to make said automatic matching of said matching means faster than otherwise.

37. A device according to claim 31, wherein data derived from said global alignment means is used to reduce a probability of incorrect matches of subsequent user-defined points.

38. A device according to claim 31, further comprising means, based on data derived from said global alignment means, for determining and conveying to a user an overlap region of said stereo image parts in which measurements are performed.

39. A device according to claim 12, wherein said measuring means includes means for indicating a measurement accuracy of said measurements.

40. A device according to claim 39, wherein said measuring means includes means for an operator to designate a maximum estimated error limit above which said device indicates a warning.

41. A device according to claim 12, wherein said measuring means includes means for using at least first and second images of said object to determine said measurement data when a view of said object is not contained entirely within said first image.

42. A device according to claim 12, wherein said measuring means includes means for providing a distance to said object to enhance a focus of said image using deconvolution techniques.

43. A device according to claim 12, further comprising means for assembling a plurality of points in a given area and structuring three dimensional information of said points into a finished file which permits reconstructing at least one geometric characteristic of said image.

44. A device according to claim 12, wherein said measuring means includes using at least one onscreen cursor.

45. A device according to claim 44, wherein said measuring means includes means for displaying a symbol, which indicates both a type of measurement being performed and a role of said cursor in said type of measurement.

46. A device according to claim 44, wherein at least one measurement point designated by a user when performing one type of measurement is kept even when a different type of measurement is selected.

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47. A device according to claim 12, wherein said measuring means includes:

means for projecting a pattern from an off-imaging axis onto said object being viewed such that said pattern tracks across said object relative to a distance of said object from said device; and

means for using a location of said pattern on said object to aid determination of said measurement data.

48. A device according to claim 12, wherein said image and said determined measurements are stored in a single file.

49. A device according to claim 12, wherein said measuring means includes means for taking a series of measurements from different perspectives, which are used to obtain a more accurate measurement than by taking a measurement from only one perspective.

50. A method for viewing an object with a probe, comprising the steps of:

splitting an image of said object into first and second adjacent stereo image parts;

detecting said stereo image parts; and

focusing said two stereo image parts from said image splitting means to said image detecting means; wherein said step of focusing uses only one optical axis.

51. A method according to claim 50, further comprising the step of converging views of said first and second stereo image parts at a given object distance such that said views overlap 100% at said object distance.

52. A method according to claim 50, wherein said step of splitting uses a refractive image splitting prism.

53. A method according to claim 52, further comprising the step of placing said refractive image splitting prism within a detachable distal tip of said borescope or endoscope.

54. A method according to claim 52, further comprising the step of disposing a window between said prism and said object wherein contact is prevented between external media and said prism.

55. A method according to claim 50, further comprising the step of viewing said stereo image parts as detected by the step of detecting.

56. A method according to claim 55, further comprising the step of displaying only one of said stereo image parts.

57. A method according to claim 55, further comprising the step of viewing said first and second image parts such that a right-hand part goes to a right eye of a viewer, and a left-hand part goes to a left eye of said viewer; wherein said viewer is provided with a three dimensional perspective.

58. A method according to claim 50, further comprising the step of comparing parameters of said first and second stereo image parts to determine measurement data of said object.

59. A method according to claim 58, further comprising the step of determining at least one geometric characteristic of said object.

60. A method according to claim 58, further comprising the step of generating an optical characteristics data set of said probe by comparing a known set of object target points.

61. A method according to claim 60, further comprising the step of using said optical characteristics data set to determine said measurement data.

62. A method according to claim 60, further comprising the step of storing said optical characteristics data set in non-volatile memory in said probe.

63. A method according to claim 60, further comprising the step of adjusting said optical characteristics data set so that said probe is operable in a medium with an index of refraction other than air.

64. A method according to claim 60, wherein said step of generating an optical characteristics data set includes color balancing.

65. A method according to claim 60, wherein said set of known object target points consists of at least two points at a first object target distance and at least one point at a second object target distance.

66. A method according to claim 60, further comprising generating said optical characteristics data set from said first and second stereo image parts, wherein said optical characteristics data set includes optical mapping distortion and magnification at one or more object target distances.

67. A method according to claim 60, further comprising the step of automatically detecting and identifying said known set of object target points.

68. A method according to claim 60, wherein said step of generating said optical characteristics data set includes using a reflection of illumination at at least one known object target distance.

69. A method according to claim 58, further comprising the step of matching a same point in each of said stereo image parts.

70. A method according to claim 69, further comprising the step of automatically matching a user designated point from said first image part to said second image part.

71. A method according to claim 70, wherein said step of automatically matching includes performing a global alignment of said first and second image parts.

72. A method according to claim 71, wherein said step of performing said global alignment includes determining a global vertical shift between said first and second image parts.

73. A method according to claim 71, wherein said step of performing said global alignment includes determining one or more regional horizontal shifts between said first and second image parts..

74. A method according to claim 71, wherein data derived from the step of automatically matching at least one matched point in said stereo image parts is used to make the step of automatically identifying at least one user defined point from said first image part to said second image part complete faster than otherwise.

75. A method according to claim 69, wherein said step of matching includes the step of automatically identifying at least one matched point in said stereo image parts.

76. A method according to claim 75, wherein data derived from the step of automatically identifying at least one matched point in said stereo image parts is used to reduce a probability of incorrect matches of subsequent user-defined points.

77. A method according to claim 75, further comprising the step of determining and conveying to a user an overlap region of said stereo image parts in which measurements are performed.

78. A method according to claim 58, wherein the step of comparing parameters includes the step of indicating a measurement accuracy of said measurements.

79. A method according to claim 78, wherein the step of comparing parameters includes enabling an operator to designate a maximum estimated error limit above which limit said device indicates a warning to said operator.

80. A method according to claim 58, wherein the step of comparing parameters includes the step of using multiple images of said object to determine said measurement data when a view of said object is not contained entirely within one image.

81. A method according to claim 58, wherein the step of comparing parameters includes the step of providing a distance to said object to enhance a focus of said image using deconvolution techniques.

82. A method according to claim 58, further comprising the steps of:

assembling a plurality of points in a given area; and

structuring three dimensional information of said points into a finished file which permits reconstructing at least one geometric characteristic of said image.

83. A method according to claim 58, wherein the step of comparing parameters includes using at least one onscreen cursor.

84. A method according to claim 58, wherein the step of comparing parameters includes the steps of:

projecting a pattern from an off-imaging axis onto said object being viewed such that said pattern tracks across said object relative to a distance of said object from said method; and

using a location of said pattern on said object to aid determination of said measurement data.

85. A method according to claim 58, further comprising storing said image and said determined measurements in a single file.

86. A method according to claim 58, wherein the step of comparing parameters includes taking a series of measurements from different perspectives, and using said measurements to obtain a more accurate measurement than by taking a measurement from only one perspective.